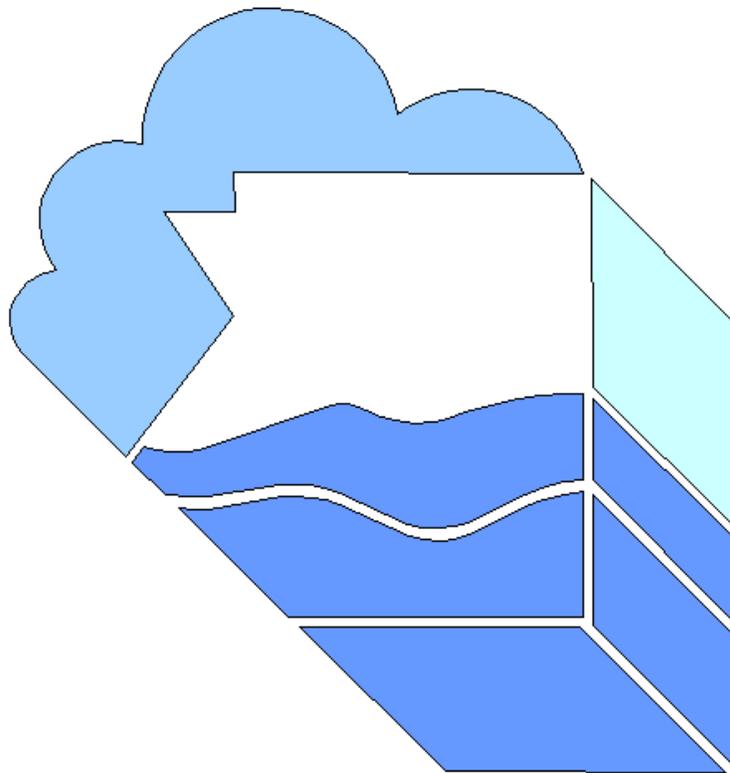


State of Arizona

DEPARTMENT OF WATER
RESOURCES ANNUAL REPORT



FY 2009-2010

ADWR'S OPERATIONS

In 1980, the Arizona Department of Water Resources (ADWR) was created to ensure dependable long-term water supplies for Arizona's growing communities.¹ ADWR succeeded the “authority, powers, duties and responsibilities of the Arizona Water Commission and the State Water Engineer relating to surface water, groundwater and dams and reservoirs.” A.R.S. § 45-103(A). The Director of ADWR “has general control and supervision of surface water, its appropriation and distribution, and of groundwater to the extent provided by this title, except distribution of water reserved to special officers appointed by courts under existing judgments or decrees.” A.R.S. § 45-103(B).

To carry out its statutory responsibilities, ADWR administers state water laws (except those related to water quality), explores methods of augmenting water supplies to meet future demands, and works to develop public policies that promote conservation and equitable distribution of water. ADWR oversees the use of surface and groundwater resources under state jurisdiction and negotiates with external political entities to protect and augment Arizona's water supply.

Groundwater Management

To address groundwater depletion in the state's most populous areas, the state Legislature enacted the Groundwater Code in 1980 and directed ADWR to implement its provisions. The goal of the Code is twofold: 1) to control severe groundwater depletion and 2) to provide the means for allocating Arizona's limited groundwater resources to most effectively meet the state's changing water needs. This effort to manage Arizona's groundwater resources was so progressive that in 1986 the Code was named one of the ten most innovative programs in state and local government by the Ford Foundation and Harvard University. When granting the award, it was noted that no other state had attempted to manage its water resources so comprehensively. Accordingly, Arizona built consensus around its policy and then followed through to make it work in practice.

Active Management Areas

Areas where groundwater depletion is most severe are designated as Active Management Areas (AMAs). There are five AMAs: Prescott, Phoenix, Pinal, Tucson, and Santa Cruz. These areas are subject to regulation pursuant to the Groundwater Code. In the Phoenix, Prescott, and Tucson AMAs, the management goal is to achieve safe-yield by the year 2025. Safe-yield is accomplished when no more groundwater is being withdrawn than is being annually replaced. In the

¹ This year, the Legislature approved ADWR's continuation for ten years, the third time ADWR has been continued since its inception in 1980. See Laws 2010, Chapter 15.

Pinal AMA, where the economy is primarily agricultural, the management goal is to preserve that economy for as long as feasible, while considering the need to preserve groundwater for future non-irrigation uses. The goal of the Santa Cruz AMA is to maintain its current safe-yield status and prevent local water tables from experiencing long-term decline. Each AMA carries out its programs in a manner consistent with these goals while considering and incorporating the unique character of each AMA and its water users.

Management Plans

Management plans reflect the evolution of the Groundwater Code, moving the AMAs toward their long-term water management goals. Management plans are required for each AMA for five sequential management periods extending from 1980 through 2025. ADWR is in the initial stages of formulating the Fourth Management Plan, scheduled for adoption by 2012. The provisions of the Fourth Management Plan will be in effect through 2020.

Assured and Adequate Water Supply Programs

The Groundwater Code established requirements to ensure that water supplies are adequate to meet the long-term needs of new development. The Assured Water Supply Program requires developers of new subdivisions within AMAs to demonstrate that sufficient water supplies of adequate quality are physically, continuously and legally available for 100 years and that any groundwater use is consistent with the AMA's management plan and management goal. Rules associated with this program promote the use of renewable supplies, such as effluent and water delivered via the Central Arizona Project (CAP), as a component of an assured water supply.

For areas outside AMAs, the Adequate Water Supply Program requires that the developer inform potential buyers of the water availability for the property, but does not prevent the sale of property when a 100-year supply is not available unless the city, town or county in which the property is located has adopted a mandatory water adequacy ordinance. Requirements under these programs serve to protect consumers from the sale of subdivided land that lacks an available long-term source of water.

Recharge Programs

The recharge program allows injection or infiltration of surface water or treated wastewater into an aquifer for storage. Through the recharge program, surplus renewable water supplies can be stored for use in the future or as a means of treating renewable supplies for annual use.

Regional Planning

ADWR conducts regional water resource planning. Regional planning efforts include technical studies of local areas and assistance in projecting future water demands. ADWR produces the *Arizona Water Atlas*, an extensive inquiry into the state's water status, to assist long-term planning.

Rural Water Initiative

ADWR participates in or facilitates 17 Rural Watershed Groups that represent water interests outside AMAs. ADWR provides technical and policy advice and assistance to these groups several times per year. In some cases, ADWR attends multiple meetings per month for the groups. The activities of the different Rural Water Groups vary greatly from group to group. In areas such as the Upper San Pedro (Sierra Vista area), Coconino Plateau (Flagstaff and surrounding areas), Verde River (Cottonwood to Camp Verde), Yuma, Bullhead City and Lake Havasu City, and Mogollon Rim (Payson and surrounding areas), significant water resources planning and development is either proposed or underway to meet the water supply needs of the area. Through their efforts, significant changes in water law and programs have been made in the last four years. ADWR has a Special Line Item Appropriation that is used to fund personnel and water resources investigations to assist the local communities with long-term planning and management programs.

Surface Water Management

ADWR's surface water activities are focused in three areas: Adjudications, Colorado River Management, and Dam Safety and Flood Mitigation.

Adjudications

The State of Arizona is conducting general stream adjudications of water rights in two major portions of the state: the Gila and Little Colorado River systems and water sources. Adjudications are judicial proceedings in the State Superior Court for Maricopa and Apache Counties to determine the nature, extent and relative priority of the water rights of all persons in each river system and source. This includes water and claims to surface water based upon state law and federal law. ADWR's role in the process is to provide both administrative and technical assistance to the State Superior Court.

Colorado River Management

Renewable water supplies of the Colorado River serve seven states, several Indian tribes and Mexico. ADWR strives to promote, protect, and comprehensively manage Arizona's apportionment of 2.8 million acre-feet annually of Colorado River water. This apportionment includes Arizona's water supply for future growth and is critical to the state's water management policies.

Dam Safety and Flood Mitigation

ADWR is responsible for the supervision of non-federal dams to reduce potential loss of life and damage to property; the management of the statewide flood warning system; assisting communities that participate in the National Flood Insurance Program; and establishing State Standards for Floodplain Management.

Water Rights Administration

Groundwater

In AMAs, groundwater pumping from a non-exempt well requires a groundwater right or withdrawal authority from ADWR. State law assesses withdrawal fees and requires annual groundwater withdrawal and use reports to be filed for pumping from non-exempt wells within AMAs. Exempt wells (non-irrigation wells having a maximum pumping capacity of 35 gpm or less) are not subject to these requirements. Groundwater use outside AMAs is not regulated and does not require a water right. However, drilling a well anywhere in the state requires that a Notice of Intent to Drill be filed with ADWR and also requires the well to be constructed in compliance with ADWR's minimum well construction standards.

Surface Water

Surface water is subject to the "doctrine of prior appropriation," meaning that the first person to put the water to beneficial and reasonable use has a right superior to later appropriations. Rights to use surface water are designated through a permitting process at ADWR. Surface water permits may be used to support claims in the adjudication process. ADWR maintains records related to water rights in both computer and physical files, which are available to the public.

Hydrology Support

ADWR hydrologists serve as the technical arm of ADWR, collecting and analyzing statewide water resource data and maintaining the state's Groundwater Site Inventory (GWSI) database. Hydrologic conditions are calculated and analyzed in preparing reports in response to legislative and judicial requests, public inquiries and water management planning efforts. ADWR hydrologists are often assigned to work on the scientific components of specific research projects and are also consulted in making determinations on permit applications. Additionally, the state Legislature has supported ADWR efforts to obtain more groundwater data around the state through the Automated Monitoring Initiative. This groundwater data collection effort relies on satellite technology to obtain water level measurements in areas of the state where groundwater information is lacking.

Water Bank

In 1996, the Legislature created the Arizona Water Banking Authority (AWBA). By storing surplus Colorado River water in central and southern Arizona, AWBA helps safeguard against future shortages on the Colorado River and assists in meeting the state's groundwater management goals. ADWR provides staff support to AWBA. AWBA is a separate agency from ADWR.

Water Protection Fund

ADWR also provides staff support for the Arizona Water Protection Fund Commission, which was created by the Legislature to preserve and enhance flows in rivers and streams and their associated riparian habitats. The fifteen commission members reflect a wide range of interests, including representatives from municipal, agricultural and industrial water users as well as from environmental organizations.

BUDGET & REORGANIZATION

The FY 2010-2011 budget enacted during the 2010 legislative session presents particularly difficult challenges to ADWR. The total ADWR state General Fund appropriation for FY 2010-2011 is \$7,360,300. The total appropriation is restricted to special line items as follows:

Operating lump sum appropriation	\$2,259,100
Adjudication support	1,256,200
Assured and adequate water supply administration	1,839,100
Rural water studies	1,173,700
Conservation and drought program	409,900
Automated groundwater monitoring	422,300
TOTAL:	\$7,360,300

The rest of ADWR's budget will consist of revenue from fees. In 2009, the Governor's Office challenged ADWR to work with stakeholders to develop a funding strategy to provide ADWR with a new, consistent revenue source by FY 2012-2013 rather than relying on the state tax revenue appropriated from the state General Fund. Increasing fees for those programs that provide services to customers is part of the solution ADWR developed with stakeholders. The budget reconciliation bill for environment and natural resource agencies, HB 2007 (7th Special Session), authorizes the director of ADWR to increase fees for services in FY 2010-2011, with a revenue cap set at \$5,662,900. ADWR projects revenue from fees in FY 2010-2011 will be approximately \$2,000,000. As part of the Governor's funding strategy, ADWR is working toward making the fee increases

adopted pursuant to HB 2007 permanent. A strategy for funding ADWR’s non-fee based programs that are critical to the State, such as Colorado River management, adjudications and regional planning, is currently under development to operate these programs without state General Fund appropriations.

The FY 2010-2011 general fund appropriation of \$7,360,300 is a 66% reduction from the previous fiscal year and a 78% reduction since FY 2007-2008. Consequently, the actual staffing level has been reduced by approximately 110 FTEs since January 2010 and 138 FTEs since FY 2007-2008.

<u>Fiscal Year</u>	<u>General Fund Appropriation</u>	<u>Actual FTEs</u>
2005-2006	\$18,796,600	227
2006-2007	\$20,789,700	239
2007-2008	\$22,763,100	236
2008-2009	\$21,401,600 [\$9,769,300 Water Bank In Lieu of GF]	235
2009-2010	\$16,879,800	157
2010-2011	\$7,360,300	97

These reductions have forced ADWR to critically analyze the way it does business and to reorganize in a way that provides much greater efficiency.

ADWR senior staff initiated a review of the agency’s organizational structure in early January 2010 in response to several conditions, namely:

- a substantial reduction in the number of employees within the agency as a result of current and projected budget reductions and a recognition that an imbalance of supervisor/managers to staff now existed;
- a belief that a review was in order to sharpen focus on the key challenges facing the agency in the next 5 years; and
- to determine if organization improvement through organizational restructuring could spur increased effectiveness and efficiency in the agency’s delivery of programs and services.

ADWR began its review of the agency’s organizational structure by first looking at the organizational structure of the water resources agencies in these western states: New Mexico, Nevada, California, Utah, Colorado, Wyoming, Montana, Oregon and Washington. While no two states have a similar organizational structure, and no two states have the same water resource challenges, some common ideas emerged from this review.

- Support functions such as finance, budget, human resources and information technology align well together in a single grouping.
- Surface water programs and groundwater programs are separate.

- Common grouping of operational functions, technical functions, permitting/water rights functions, and interstate and international water management functions across all states' organizations, but in different combinations and emphases reflective of each state's individual priorities and challenges.

Next, ADWR senior staff met over a period of several days to identify programs across the agency, where primary responsibility resided and where supporting activity occurred. From there, programs were prioritized and focus turned to streamlining the number of "touches" each program received from other areas. A literature review of the relevant public administration scholarship revealed common guidance relative to organizational design in public entities: design should focus on how work is organized and what the objectives are to be accomplished; and organizations that share closely related missions/activities should be administered by the same agency/organization.

Finally, ADWR senior staff met to assess strengths and weaknesses between two organizational models, one consisting of centralized services and one that decentralized services. At that time, it was noted that ADWR operated in a hybrid model, where the Adjudications group, Colorado River management and the Surface Water Division maintained within their organizations all the resources required to implement their programs, including hydrologists, engineers and GIS resources, and thus served as a decentralized services model; and the Water Management and Hydrology divisions operated under a centralized system where the Hydrology Division maintained all the technical staff and resources required to support the Water Management division's permitting and compliance activities.

It became clear that an organizational modification was needed to meet the objectives of becoming more efficient and effective, more responsive, and to flatten the organizational structure.

ADWR senior staff determined that the issues of organizational priority going forward include:

- Program accountability
- Efficiency in communication and working together
- Providing a single point of contact for the regulated community
- Clear program objectives for employee accountability
- Consistency in our approach
- Maximizing our resources

Based on these priorities, and the research and conversations that occurred, continuing a kind of hybrid model of centralized/decentralized services was deemed appropriate with some key changes that follow:

Water Management

- The permitting programs where Water Management is the process “owner” should hold all the resources required to complete the permit, under a single management structure. This will meet our priority goals of improving program accountability, improving efficiency and communication, providing a single point of contact for the regulated community, consistency in our approach and maximizing our resources. Moreover, combining some of the permitting programs that are related into a single managed section will provide greater opportunities to leverage those resources, while reducing the number of managers. The technical hydrology resources that historically provided permitting support historically currently number eight (8) FTE including a manager and a supervisor. Prior to the reorganization, the number of Water Management permitting staff, including managers and supervisors was nine (9) FTE. For comparison purposes, the ADEQ APP permitting program, which is similar in complexity to the Assured and Adequate Water Supply program, employs a permitting project manager to hydrology ratio of 2:1; that is for every 2 permitting project managers, there is one hydrology resource assigned. Prior to the reorganization, ADWR was staffed in a 1:1 ratio of hydrology resources to Water Management permitting resources. Based on this analysis, the recommendation was made to merge the Recharge permitting unit with the Assured and Adequate Water Supply permitting unit. Transfer four (4) hydrology resources from the Water Resources Section to the new Permitting section, consolidated under a single manager.
- Create a new section for WELLS that includes NOI permitting, compliance with standards, water quality, and customer outreach. This change was accomplished by transferring one hydrology resource to the new section, and transferring responsibility and accountability for serving as liaison to ADEQ WQARF Board. Assign a new manager for this expanded function. Ensure that all customer calls and messages are routed to this section for enhanced service.
- Issues related to water sustainability and efficiency is common within AMAs and statewide. To strengthen the Department’s water sustainability efforts and leverage resources, these functions should be consolidated within a single organization. It was recommended to transfer the Community Water Planning programs and its three (3) FTEs to Water Management.
- All other Water Management activities with AMAs and Data Management remain the same.

Surface Water

- Technical resources within the division can be consolidated within a single unit. It was recommended to align existing technical resources into a single Engineering unit to provide support for permitting, floodplain management, environmental program and Adjudication activities. Transfer one (1) hydrology resource to new unit.
- Consolidate Adjudication technical support within the Surface Water Division. It was recommended to transfer Adjudication Section FTE to Surface Water Division.
- Surface water activities related to instream flow as well as growing requirements to understand and participate in an array of environmental resource programs and activities demand focus. It was recommended to create a new environmental program function to work on instream flow program as well as environmental programs where ADWR participates in and provides technical support on the Colorado River, such as the LCRMSCP and Glen Canyon Adaptive Management Program. Secure funding from outside sources for two (2) FTEs.
- All other activities related to floodplain management and permitting remain the same.

Hydrology and Water Resources Investigations

- The existing division was a mixture of highly specialized activities such as groundwater modeling and geophysical surveying; permitting support; water quality support; and field services such as water level sweeps, monitoring investigations and water level changes. Recommendations made and implemented included the elimination the Water Resources Section that provided permitting support. with transfers of four (4) FTE to the Water Management Division to conduct permitting support activities in line with the 2:1 ratio employed by the APP permitting program. Other changes made included the transfer of one (1) FTE to Surface Water for support activities with permitting and adjudication work, and the transfer one (1) FTE to the newly formed Wells and Permits Unit of the Water Management Section. Two (2) FTE were reassigned within this division.
- With permitting support occurring within the permitting program, the Hydrology division will be able to focus its activities on water resource investigations. The ADWR Strategic Workplan was modified to reflect the change in focus toward moving water resources investigations forward.
- With a new focus on water resources investigations, the division needed to adjust its focus to serving as a clearing house for water resource investigations that have taken place or are underway throughout the state, analyzing the results and synthesizing the information in a way that is helpful to establishing a framework for future water demand and supply scenarios throughout Arizona. Supporting the new focus on water resources

investigations, the division has been supplemented with “boots on the ground” planning resources that will coordinate with local groups, including existing watershed partnerships, other water resource organizations and the universities. Melding these two functions will allow for a more effective and efficient way to move forward on a state water framework, among other needs. Moreover, aligning planning resources geographically will allow for greater focus and accountability for results. Based on these resource needs a Regional Planning Unit was created with two senior planners (2) FTE from the former Statewide Planning Group and one senior hydrologist reassigned from permit support duties to provide technical support. One planner FTE will function as water planning program manager for the northern part of the state and one planner FTE will serve as water planning program manager for the southern part of the state.

Colorado River Management

- While the majority of the work in this group is dedicated to Colorado River programs and activities, the focus is broadening to include all of Arizona’s interstate and international rivers. Recommendation: Change the name of this group to Interstate and International Waters. Include Arizona/Mexico Commission, Border Governors, Trans-Boundary Aquifer and other activities that span states and the nation of Mexico in this section.
- Due to the nature of existing and projected workload, more resources are required. Recommendation: Transfer one (1) hydrology FTE to this section to support these activities. Transfer responsibility for managing the tri-organizational contract with the AZ/MX Commission resource to this section.

Administrative Support

- Continue consolidation of financial services, general services and information technology in this unit.

Legal Division

- All legal resources continue to remain consolidated in this division. Additional responsibility for agency compliance should reside here. It was recommended to transfer one (1) FTE from Water Management to Legal to serve as ADWR Compliance Coordinator.

Cross-Cutting Teams

Three overarching activities require formal, structured cross-cutting teams to ensure effective and efficient communication and achievement of agency goals and objectives. They are: Planning; Data Management; and Compliance. Once this reorganization is finalized, agency charters for these cross-cutting teams will be

developed, with the expectation that they will meet at least quarterly to communicate activities, projects and issues.

ACCOMPLISHMENTS IN FY 2009-2010

Water Management Division

Blue Ribbon Panel on Water Sustainability

Following Governor Jan Brewer's commitment to collaboration on water resource issues, ADWR Director Herb Guenther, Arizona Corporation Commission (ACC) Chairman Kris Mayes, and Arizona Department of Environmental Quality (ADEQ) Director Ben Grumbles (collectively the Executive) have initiated a statewide effort aimed at improving the long term sustainability of Arizona's water supplies through increased conservation and recycling.

A Blue Ribbon Panel on Water sustainability (Panel) was formed to identify and overcome obstacles to increased water sustainability. The Panel has been challenged to provide advice to ADWR, ADEQ and the ACC on the technical, legal, and policy aspects of promoting recycling of wastewater, gray water, industrial process water, and storm water. While there are many opportunities to increase water conservation and recycling, an early priority of the Panel has been a focus on wastewater reuse through detailed examinations of water quality, regulatory impediments, infrastructure requirements and public perception challenges that could limit the increased use of this important water supply.

Membership on the Panel was designed to facilitate discussions between Arizona stakeholders involved in identifying regulatory impediments and drafting new strategies to advance water conservation and increase the use of recycled waters. In December of 2009, the Executive identified and requested members to participate in this effort based on their knowledge and leadership in Arizona water issues. The Panel membership is composed of 40 members representing large and small cities, counties, agriculture, industry, Indian Tribes, environmental interests, Arizona universities, legislative leaders, and other leaders in Arizona water issues.

Four meetings have been held to date, designed to bring the Panel together to build a common understanding of the issues facing Arizona and the challenges of developing recycled water strategies and increasing water conservation efforts across the State.

Modified Non-Per Capita Program

The Modified Non-Per Capita Conservation Program (Modified NPCCP), a performance-based program developed in conjunction with stakeholders from all Active Management Areas (AMAs), became effective in May 2008. All large

municipal water providers located in AMAs that do not have a Designation of Assured Water Supply are required to participate in the program; participation is optional for designated providers.

The Modified NPCCP requires participating providers to implement water conservation measures that result in water use efficiency in their services areas. A water provider regulated under the program must implement a required Public Education Program and choose one or more additional Best Management Practices (BMPs) based on its size, as defined by its total number of water service connections. The 53 BMPs are divided into seven categories: 1) Public Awareness, 2) Education and Training, 3) Outreach Services, 4) Physical System Evaluation and Improvements, 5) Ordinances, Conditions of Service, Tariffs, 6) Rebates/Incentives, and 7) Research/Innovation.

Pursuant to the second modification to the Third Management Plan, the Director established an advisory committee to assist in evaluating the effectiveness of the program. The main focus was the review of materials, forms, and other resources developed for the program. Future meetings will focus on plans for program evaluation.

In June 2008, providers required to participate in the program were noticed that regulation under the program would begin in January 2010, and that Provider Profiles were due July 1, 2009. AMA staff established internal procedures for the review, approval, response and documentation of the Provider Profiles received. All providers in the program received approval letters prior to 90 day deadline (September 30, 2009).

A Conservation Efforts Report will be due each year on March 31 and will be used on an annual basis to determine a provider's compliance under the Modified NPCCP.

To date, 43 providers have entered the program from the five AMAs:

- 22 from Phoenix AMA
- 11 from Tucson AMA
- 5 from Pinal AMA
- 3 from Santa Cruz AMA
- 2 from Prescott AMA

Assured and Adequate Water Supply

Over the last year and a half, ADWR has been engaged in an internal review of the Assured and Adequate Water Supply Rules and its Substantive Policy Statement on the requirements for Hydrologic Studies Demonstrating Physical Availability of Groundwater for Assured and Adequate Water Supply Applications. The

purpose of this review was to improve efficiency and increase understanding of the requirements for hydrologic studies by identifying areas of the current rules and policy statement that needed clarification or modification. The result of that review is a set of proposed modifications to the rules and policy statement that can be viewed on the ADWR website at: <http://www.azwater.gov>.

Surface Water Division

Rehabilitation of Deficient Dams

ADWR is overseeing rehabilitation projects at twelve deficient dams. Two of the projects are made possible through grants from the Dam Repair Fund. Eastern Arizona College is recipient of a grant being used to fund the design for the safe removal of Cook Reservoir Dam in Graham County. The Silver Creek Flood Protection District is recipient of a grant being used to fund the design for rehabilitation of Millet Swale Dam in Navajo County. ADWR is working closely with the Flood Control District of Maricopa and Magma Flood Control District in Pinal County to expedite review and processing of three construction permit applications in order to secure millions of dollars in time-sensitive federal funding.

ADWR is leading a multi-agency statewide study updating rainfall storm data used for design and rehabilitation of dams. Results of the study will be used to improve understanding of public risk and reduce necessary rehabilitation costs by an estimated \$25 to \$50 million over the next ten years. Cost-sharing partners include Maricopa County, Arizona Game and Fish Department, the USDA Natural Resources Conservation Service and the DHS Federal Emergency Management Agency.

Continued Assistance to the General Stream Adjudications

ADWR completed several important reports and analyses requested by the Superior Court and Special Master, including:

- Published a final catalog of non-exempt registered wells in the Eastern Little Colorado River (LCR) basin. The catalog was a condition of the Zuni Indian Water Rights Settlement. The LCR adjudication court will use the catalog to administer the settlement decree.
- In preparation of a final Hopi Hydrographic Survey Report (HSR) for the LCR adjudication court, completed responses to comments on the preliminary HSR related to historical topics, crop consumptive use, claimed irrigated lands and available surface water supplies.
- Completed an assessment of historic floodplain migration in the San Pedro River Watershed. The assessment was performed in response to objections filed on ADWR's June 2009 subflow zone delineation report for the Gila River adjudication court.

- Published an analysis of land ownership changes within the San Pedro Riparian Conservation Area (SPRNCA). The analysis was requested by the Special Master to the Gila River adjudication and will be used to resolve federal reserved right claims filed for SPRNCA by the Bureau of Land Management.

Establishment of Surface Water Rights Stakeholder Working Group

ADWR performed an internal review of the Surface Water Rights Permitting Program. The purpose of the review was to improve efficiency and effectiveness of the program. Among other items, the review identified the lack of procedural rules and specific policy decisions as primary obstacles to the timely processing of surface water right filings and claims. As a result, ADWR established a stakeholder working group to provide a forum for receiving input on pending policy decisions and the need for procedural rules. In May 2010, ADWR provided draft procedural and submittal concepts to the working group for review and has received numerous comments. The group will continue to meet to receive stakeholder feedback on both procedural and substantive policy issues.

Hydrology Division

Groundwater Modeling

The Groundwater Modeling Section completed major studies and published reports on:

- The update and calibration of the SRV groundwater flow model (final report)
- Risk analysis of pumping impacts in the Santa Cruz AMA (final report)
- Phoenix AMA municipal water provider AWS redesignation modeling (draft report)

Field Services

The Basic Data Unit conducted several groundwater basin water level sweeps and published Water Level Change Map Series reports for:

- The Upper San Pedro basin
- The Big Chino Sub-basin
- The Verde Valley basin
- McMullen Valley basin

The Geophysics and Survey Unit completed several gravity and subsidence studies and published reports and maps on:

- Gravity Survey with Depth-to-Bedrock and Preliminary Groundwater Storage Estimates for the Hualapai Valley Groundwater Basin, Mohave County, Az.

- 17 land subsidence maps for various subsidence prone areas throughout the state using Synthetic-Aperature Radar Interferometry (INSAR).

Colorado River Management

Shortage Sharing and Water Management Agreement with Mexico

The Department continued its work with Mexico and the Basin States through the International Boundary and Water Commission (IBWC) on a shortage sharing and water management agreement. The agreement is proposed as a Minute to the 1944 Treaty with Mexico and would address shortage sharing between the two countries and would create the framework for development of bi-national water augmentation projects. Mr. Edward Drusina was sworn into office as the new U.S. Commissioner of the IBWC on January 19, 2010, and he has quickly engaged on the Treaty amendment issues. In April 2010, Mexico suffered extensive damage to its water delivery infrastructure and farmland as the result of a major earthquake. Commissioner Drusina and his counterpart, Mexican Commissioner Salmon have expressed the interest of both federal governments to move quickly to adopt a Treaty amendment including earthquake-related water management provisions.

Colorado River Basin Water Supply and Demand Study

In September 2009, the seven Colorado River Basin States obtained a \$1 million federal grant to conduct a two-year study of future Colorado River water supply and demand imbalances using a downscaled climate model. The study will characterize water supply and demand imbalances through 2060, and identify potential strategies to address imbalances including modification of reservoir operating criteria, facilities modifications or development, water conservation and water supply enhancement programs. The Department has been working with the Central Arizona Project and Colorado River water users throughout the state on developing water demand projections for the state of Arizona.

SUGGESTED LEGISLATION

Issue 1: Reduction of Groundwater Reliance in the Five AMAs

The Groundwater Code establishes a goal of safe-yield by 2025 for the Prescott, Phoenix, and Tucson AMAs. Safe-yield is accomplished when no more groundwater is withdrawn from the aquifer than is annually replaced. Although Arizona law has set a goal of achieving safe-yield by 2025 for groundwater supplies in the State's most severely depleted areas, groundwater depletion is likely to continue past that date under the current regulatory structure. The consequence of not achieving safe-yield will be to threaten the long-term

availability of water supplies for existing homes, industries and communities in AMAs.

Pursuant to A.R.S. §§ 45-562 through 45-568.02, ADWR is required to adopt a series of five groundwater management plans for each AMA to be implemented in sequence from 1980 through 2025. ADWR is currently initializing the Fourth Management Plan, which it anticipates implementing in 2012. The Code mandates the inclusion of progressively more restrictive groundwater conservation requirements and methods to supplement groundwater supplies from one management period to the next. The Code is specific as to what programs must be included in each sequential management plan and ADWR has met the statutory mandates requiring the establishment of a water rights system and the continuing development and refinement of mandatory conservation requirements for industrial, municipal, and agricultural water users.

Although the management plans prepared by ADWR comply with the Code's mandated water management goals, ADWR acknowledged as early as 1994 in its *Arizona Water Resources Assessment* that the mandatory conservation requirements contained in the plans may not be sufficient to reduce groundwater use to safe-yield levels in AMAs. In addition, the Phoenix AMA Third Management Plan, which was adopted in December 1999, acknowledged that, "[a]lthough safe-yield is an attainable goal, it is apparent that sufficient progress has not been made toward this goal, nor have the statutory and institutional structures to succeed been fully established." Further, the Tucson AMA Third Management Plan states, "[t]here are structural weaknesses in certain portions of the Groundwater Code...because few of the Code provisions are tied directly to achieving the [safe-yield] goal."

Both the Phoenix AMA and Tucson AMA Third Management Plans discuss alternative approaches or programs that should be evaluated to assist AMAs in their efforts to achieve the safe-yield goal. Possible programs or options to address water management problems include: incentives for groundwater recharge into the aquifer and use of renewable resources, greater restrictions on new groundwater pumping, and addressing the cost disparities between groundwater and renewable supplies. In 2000, a Governor's Water Management Commission (Commission) was created to study these issues and make recommendations. The Commission was made up largely of entities with a direct interest in how the regulations affect their water use. Although the Commission recommended a number of statutory changes to help achieve the safe-yield goal, only a handful of the Commission's recommendations were ultimately adopted into law.

The following are the primary reasons that safe-yield will not be achieved under the current statutes:

- ❖ ***ADWR has limited ability to reduce grandfathered groundwater use*** – The Groundwater Code created several types of grandfathered rights, depending on the historic groundwater use, and established methods for determining the amount of groundwater associated with each grandfathered right. The majority of these grandfathered groundwater rights are associated with the agricultural and industrial sectors. While the Groundwater Code, through the management plan conservation requirements, allows ADWR to require grandfathered right holders to implement reasonable conservation measures designed to reduce their groundwater use, the Code does not give ADWR authority to significantly reduce the amount of groundwater associated with each grandfathered right. Furthermore, the Groundwater Code does not give ADWR authority to require grandfathered rights holders to eventually convert from groundwater to renewable water sources.

- ❖ ***Agricultural flexibility credits allow carryover to future years*** – The Groundwater Code established a flexibility account for agricultural groundwater users within AMAs that allows them to accrue credits for unused groundwater entitlements and carry the credits over for use in the future. Any portion of an agricultural user’s annual irrigation groundwater entitlement that is not used during the year is added to the user’s credit balance. An agricultural user can accrue an indefinite amount of groundwater credits in its flexibility accounts, as the Groundwater Code does not establish a maximum credit balance. Additionally, with certain restrictions, an agricultural user can transfer the credits earned during a year to another agricultural user in the same AMA. An agricultural user with credits in its flexibility account can use the credits to *exceed* its annual groundwater allotment as established in the management plan. The credits accrued by agricultural users have essentially created a lien against the groundwater supply that if used in the future could increase groundwater depletion and further hamper the AMAs’ ability to achieve safe-yield. In 2007, agricultural flexibility credits in the Prescott, Phoenix, and Tucson AMAs totaled more than 6.8 million acre feet, or more than 6.5 times the total groundwater consumption for these AMAs in the same year. The agricultural sector in the Phoenix AMA already has enough accrued credits to supply all agricultural water needs in that AMA until at least 2013.

- ❖ ***Groundwater withdrawal permits increase the amount of groundwater that may be withdrawn in an AMA*** – In addition to grandfathered rights, the Groundwater Code created groundwater withdrawal permits that allow persons without a grandfathered right to pump groundwater in an AMA for the following purposes: (1) to drain land for agricultural production or building stabilization; (2) for the withdrawal of poor quality water; (3) for

hydrologic testing; (4) for generating emergency electrical energy; (5) for mineral extraction and processing; and (6) for general industrial uses. ADWR is required by statute to issue permits for mineral extraction and industrial uses for terms of up to 50 years if the permit applicant meets certain criteria. ADWR is further required to renew these permits for as long as the applicant continues to meet the statutory criteria. In 2007, groundwater withdrawal permits allowed 15,691 acre feet of groundwater to be used in the Phoenix, Prescott and Tucson AMAs, although only 4,527 acre feet of groundwater, or 29 percent of the allowance, were actually used.

Issue 2: Ensuring Long-Term Water Supplies for Future Generations

One of ADWR's most important roles is securing water supplies for future generations. As such, when the Groundwater Code was adopted in 1980, it changed the water adequacy requirements for new subdivisions within AMAs by requiring a developer of subdivided land in an AMA to obtain a determination of a 100-year *assured* water supply from ADWR before the plat for the subdivision can be recorded and a public report can be issued by the Arizona Department of Real Estate ("ADRE"). A.R.S. § 45-576. In order to obtain a determination of assured water supply, the developer must demonstrate that a water supply of adequate quality is physically, continuously and legally available for 100 years, that the developer has financial capability to construct any necessary delivery and treatment facilities, and that any groundwater use is consistent with the management plan and management goal of the AMA. Areas outside AMAs are not subject to the assured water supply requirements, but remain subject to the adequacy provisions of A.R.S. § 45-108.

Limited consumer protections in areas outside of AMAs provide residents with less assurance of a future water supply than residents within AMAs. Consumer protection is weaker in two ways. First, outside AMAs, only the first purchaser of a new subdivision lot must receive notification of the sufficiency of the water supply. Within AMAs, new subdivisions must have a sufficient water supply before any lots are sold. Second, well spacing is regulated in AMAs but is not regulated in areas outside AMAs. Thus, outside AMAs, new large wells may be drilled near a well serving a subdivision, causing the subdivision well to go dry.

The limited consumer protections in areas outside AMAs raise several concerns regarding the water supply on which those homeowners rely:

- ❖ *Need for more assurance of sufficient water* – The adequate water supply provisions, applicable outside AMAs, require ADWR to issue a report on the sufficiency of the water supply, but do not prohibit the development or

sale of subdivision lots in the absence of sufficient water. If ADWR determines that the water supply is insufficient, the developer is required only to notify potential buyers by displaying the water supply information in promotional materials and subdivision lot sales contracts. Only the original purchaser is entitled to notification regarding the water supply, as there is no requirement that the water supply information be disclosed to purchasers when the subdivision lot is resold. As mentioned above, this contrasts with the assured water supply provisions applicable within AMAs, which prohibit the development or sale of subdivisions that do not have a sufficient 100-year water supply, thereby protecting consumers from purchasing a subdivision lot with insufficient water to meet their needs.

In 2007, SB 1575 was enacted to address the inequity between the two sets of requirements in response to recommendations from the Statewide Water Advisory Group (SWAG). SB 1575 amended the subdivision laws to authorize cities, towns and counties outside AMAs to require developers within their jurisdictions to demonstrate a 100-year adequate water supply before platting and selling lots. A county may adopt such a requirement only upon the unanimous vote of the board of supervisors. To date, only Cochise County, Yuma County, the Town of Patagonia, and the City of Cottonwood have adopted such requirements. All other areas of the state outside AMAs are still regulated under the original adequacy provisions.

The Department of Economic Security projects that by 2025 there will be approximately 1,570,600 additional people living outside AMAs. As only the original purchaser of a subdivision lot outside AMAs receives information regarding the sufficiency of the water supply, subsequent purchasers may not know that the water supply is insufficient. A partial solution would be to require ADWR's water supply determination to be recorded with the County Recorder's Office. While this would not require that subsequent purchasers receive notification regarding the sufficiency of the water supply, it would provide notification during a title search. ADWR recommends that the Legislature consider enacting a law to require that subdivision developers record with the appropriate County Recorder's Office ADWR's determination of the sufficiency of the subdivision's water supply.

However, even if increased notification of the sufficiency of the water supply is legislated in the future, under the adequate water supply program, subdividers outside AMAs are allowed to develop and sell new subdivisions that do not have sufficient water. This affects not only the purchasers of lots within the new development, but could also result in the depletion of the water upon which existing residents rely. To provide

greater protection, ADWR recommends that the Legislature consider amending A.R.S. § 45-576 to extend the assured water supply provisions outside AMAs. If the assured water supply provisions were extended outside AMAs, there would be no need to require developers to record ADWR's determination of the sufficiency of the water supply.

- ❖ ***Well spacing and impact is unregulated*** – ADWR is not authorized to regulate the spacing between wells or the impact that a new well will have on existing wells outside AMAs. The Groundwater Code requires filing a notice of intent to drill a well outside an AMA, but does not require minimum spacing between wells, or prohibit new wells that will deplete the water supply of existing wells. In contrast, within AMAs, the Groundwater Code requires ADWR to adopt rules that prevent new wells from causing unreasonably increasing damage to surrounding land or other water users. With certain limited exceptions, ADWR's rules prohibit drilling new wells within an AMA if the proposed well will excessively decrease the water supply of an existing well.

As growth occurs outside AMAs without renewable water supplies, most new residents will drill wells to obtain groundwater. If additional wells deplete the water supply, new homeowners, existing residents, municipalities, and industry will be affected. Consequently, ADWR recommends that the Legislature consider amending A.R.S. § 45-598 to give the Department authority to authorize ADWR to establish well spacing requirements outside AMAs.

Issue 3: Surface Water Permitting

ADWR lacks authority to bring administrative enforcement actions for violations of the state's surface water laws, manage the use of surface water resources pursuant to water rights or claims, or resolve disputes between surface water users. When ADWR receives a complaint that a person is violating the surface water laws, it attempts to persuade the violator to comply. If that fails, ADWR requests the County Attorney or the Attorney General to investigate and take proper enforcement action. Certain violations of the surface water laws have been classified as class 2 or 3 misdemeanors and may be prosecuted by local law enforcement agencies, the county attorney or the Attorney General. See A.R.S. §§ 45-112 and 45-190. In some cases, the public is frustrated by ADWR's inability to resolve surface water complaints.

CONCLUSION

The primary mission of ADWR is to ensure an adequate quantity and quality of water for Arizona's future. Challenges to providing a sustainable water supply are numerous. By 2025, when the Code requires key management goals to be met, the projected population of the State will exceed 6 million within the AMAs and 1.8 million in the rest of the State. This represents a 280 percent population increase in the AMAs alone since 1980. Competition for water throughout the Southwest continues to increase as neighboring states experience similar rates of growth; Arizona must continue to be vigilant to protect its water rights, particularly its rights to Colorado River water. It is essential that our State continue to play a prominent role in Colorado River water supply, operations and allocation issues.

Arizona's water is also used or claimed by a number of Indian tribes whose legal rights to quantities of water currently are the subject of settlement negotiations or litigation as part of the adjudication of water rights within the State. The outcome of these proposed settlements and settlement negotiations will significantly impact the State's water budget. In addition to water supply needs for human use, environmental protection issues are of substantial concern and may affect Arizona's future water supply availability.

The water needs of Arizona's rural areas, where few renewable supply options exist, are becoming urgent. The Statewide Water Advisory Group formed in 2006 has provided valuable information from a broad spectrum of stakeholders and helped develop new programs for meeting water needs statewide. The Statewide Planning Commission formed by HB 2661 (2010) and appointed by Director Guenther continues that critical work, this time with even greater focus on meeting the water needs in rural Arizona.

Substantial progress has been made within central Arizona in moving toward a sustainable water future, and with the new laws passed by the Legislature, in rural Arizona as well. ADWR's long-term view of water management needs has served the State well.